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EXAMINER

PWU, JEFFREY C

ART UNIT	PAPER NUMBER
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2143

DATE MAILED: 04/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/755,027

Applicant(s)

FORSLOW, JAN

Examiner

Jeffrey C. Pwu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 2/13/06
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 72-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 72-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 72-101 are rejected under 35 U.S.C. 102(e) as being anticipated by Alriksson et al. (US 6,977,938)

Alriksson et al. teaches claims :

72. A mobile routing system, comprising:

a mobile node; (“nodes in a ad hoc network ”)

a plurality of sinks in a computer network, the plurality of sinks including a plurality of mobile routers; and (col.3, line 47-col.4, line 32)

memory storing computer readable instructions, that, when executed by the processor, cause the routing system to perform a method that includes the steps of:

detecting movement of the mobile node between the plurality of sinks in the computer network; and (col.3, line 47-col.4, line 32; “The process of detecting a foreign agent is quite similar to that used by Internet nodes to detect routers which support the Internet Control Message Protocol (ICMP). Each mobility agent periodically broadcasts agent advertisements to its directly attached subnetworks to advertise its existence. The

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mobile node listens for these advertisements in order to select a mobility agent, i.e. a foreign agent, through which the node can register with its home agent”)

maintaining a connection by maintaining a stable IP address for the mobile node and sustaining, without packet loss, one or more active application sessions between the mobile node and one or more active peers upon detecting movement of the mobile node in accordance with a predefined reactive routing protocol. (“col.3, line 48-col.4, line 65)

73. The routing system of claim 72, wherein the reactive routing protocol includes an Ad-hoc On-Demand Distance Vector (AODV) protocol. (col.8, line 63-col.9, line 28)

74. The routing system of claim 72 further configured to extend the reactive protocol with a proactive routing update for the one or more active peers upon detecting movement of the mobile node from an old sink to a new sink. (col.10, line 42-col.11, line 20)

75. The routing system of claim 74, wherein the mobile node transmits an initial message to the new sink with a destination sequence number set equal to a destination sequence number of a last registration reply that was distributed via the old sink. (col.11, lines 41-63)

76. The routing system of claim 75, wherein the new sink treats the message as an indication that the mobile node is requesting the new sink to act as the mobile node's ingress router in the routing system network. (“Mobile Ad Hoc Network by using either tunnelling or proxying: a) Tunnel packets to the foreign agent with which a node is registered. If it cannot be decided if the

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destination is located within the ad hoc network by looking at the IP address; search for the node within the ad hoc network before tunnelling the packet. b) Let the Internet gateway use proxy route replies to respond to route requests. 4. To receive packets from hosts on the Internet: The packets are routed to the foreign agent by ordinary Mobile IP, The foreign agent can then deliver the packets to the node in the ad hoc network.”)

77. The routing system of claim 76, wherein the new sink transmits an unsolicited route reply toward the old sink if it has an existing route toward the mobile node in a routing table of the new sink and if the destination sequence number is the same for the route as the one received from the mobile node in the initial message. (col.8, line 63- “In order to reach the Internet from a Mobile Ad Hoc Network using host routing, as known in the art, it should still be possible in those cases where on-demand routing is used in ad hoc networks with a network ID assigned to it, since the nodes of the ad hoc network could probably store default routes and network routes in their routing table and use almost the same kind of look-up mechanism that is used in ordinary routing according to the IP. However, it is much more flexible than in ad hoc networks operating without network IDs. In that case it cannot be decided whether a destination is located within the ad hoc network or not, by simply looking at the network ID of the destination as described above. It then becomes necessary to look for the node in the ad hoc network before it is decided if it is located within the ad hoc network or not”)

78. The routing system of claim 77, wherein the new sink sends a route request with a destination sequence number set to the same value as the sequence number received from the

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mobile node in the initial message. (see DSR “Dynamic Sequence Routing” mobile Ad Hoc Network sequencing)

79. The routing system of claim 78, wherein the old sink or a mobility router along a path to the old sink, responds with a route reply message. (Col.3, line 15 - “In DSR two basic mechanisms are used, route discovery and route maintenance. Route maintenance is used for handling link breakages and is carried out whenever a route is used to send packets. Route discovery is used to find a route from the source to the destination. The network is flooded with route request messages. Each node in the network adds its address to a route request received in the node and then forwards it. If a route exists to the destination the route request will find its way to the destination. All that the destination node has to do is unicast a route reply back to the source using the route listed in the route request. Each node in the network maintains a route memory in which it stores the routes that it has learned. Route discovery is only used when an appropriate route cannot be found in the route memory.”)

80. The routing system of claim 79, wherein the new sink sends an unsolicited route reply message for the mobile node destination with the route request source IP address set to the old sink and the destination sequence number incremented by one. (Col.3, lines 15-29)

81. The routing system of claim 80, wherein the old sink and one or more mobility routers along the path to the old sink and one or more mobility routers along a path to the new sink are updated with a new route having a preferred destination sequence number. (col.4, lines 7-19)

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82. The routing system of claim 81, wherein the old sink forwards packets destined to the mobile node along a route via the new sink. (col.3, line 30-col.4, line 33)

83. The routing system of claim 82, wherein a route reply is sent from the old sink via the new sink to the mobile node to indicate that a handover procedure has been successful and wherein the new sink sends a route error to the mobile node if it cannot reach the old sink. (col.3, line 30-col.4, line 33)

84. The routing system of claim 83, wherein the mobile node migrates a forwarding of datagrams from a link of the old sink to a link of the new sink. (col.4, lines 19-32)

85. The routing system of claim 84, wherein the mobile node determines an optimized path toward active peers by initiating route requests toward the active peers. (col.3, line 30-col.4, line 33)

86. The routing system of claim 85, wherein a source sequence number in the route request to an active peer is set equal to the new destination sequence number of the mobile node. (col.3, line 30-col.4, line 33)

88. The routing system of claim 72, wherein a mobile service router sink also act as a proxy for mobility routing protocol exchanges between the mobile node and the network. (see “proxy route reply method”)

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89. The routing system of claim 88, wherein the mobile node uses a Dynamic Host Configuration Protocol (DHCP) request as an initial message to the new sink. (See "Dynamic Source Routing ("DSR")")

90. The routing system of claim 89, wherein the DHCP request includes the mobile node's IP address and authenticator. (col.8, line 63-col.9, line 28)

91. The routing system of claim 90, wherein the mobile router sink maps the DHCP request to at least one of a RADIUS request or a DIAMETER request further sent to a mobile service manager for authentication. ("Another variant of the adaptive solution is to make the foreign agent select between unicast and broadcast depending on the ratio between visiting nodes and the total amount of nodes in the ad hoc network. If the ratio is high broadcast should be used, otherwise unicast should be used. The hard part of this solution is to find the total number of nodes in the ad hoc network. A possible solution is to make a qualified guess by estimating the diameter of the network from the number of hops to the visiting nodes.")

92. The routing system of claim 91, wherein the mobile router sink initiates a route request on behalf of the mobile node upon receipt of a datagram from the mobile node. (col.4, lines 19-32)

93. The routing system of claim 92, wherein the mobile router sink buffers received datagrams until a path is established to a destination of the datagrams. (col.4, lines 19-32)

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98. The routing system of claim 72, wherein a source of a route reply is configured to initiate a gratuitous route reply toward the source in order to provide continuous streaming of datagrams for active application sessions. (col.4, lines 19-32)

99. The routing system of claim 98, wherein the source of the route reply sends the gratuitous route reply if a life time of the route is expiring within a configured number of seconds and datagrams are received along a path between the mobile node and the one or more active peers. (col.4, lines 19-32)

Allowable Subject Matter

3. Claims 87, 94-97 and 100-101 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments with respect to claims 72-101 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey C. Pwu whose telephone number is 571-272-6798.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



4/24/06
JEFFREY PWU
PRIMARY EXAMINEE